UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/581,470	06/01/2006	Thomas Lerche	WUE-58	3887

7590 12/24/2008

Thomas J. Burger
Wood Herron & Evans
2700 Carew Tower
441 Vine Street
Cincinnati, OH 45202-2917

EXAMINER	
OREILLY, PATRICK F	

ART UNIT	PAPER NUMBER
3749	

MAIL DATE	DELIVERY MODE
12/24/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/581,470	LERCHE, THOMAS	
	Examiner	Art Unit	
	Patrick F. O'Reilly III	3749	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *25 September 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *2-5 and 7-21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *2-5 and 7-21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *18 June 2008* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *7/2/2008*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This action is in response to applicant's amendment received on September 25, 2008.

Information Disclosure Statement

2. The information disclosure statement (IDS) submitted on July 2, 2008 is acknowledged. The submission is in compliance with the provisions of 37 C.F.R. § 1.97 and 37 CFR § 1.98 and, therefore, the references therein have been considered.

Claim Notes

3. The language used in claim 12 of this application appears to invoke the sixth paragraph of 35 U.S.C. 112. According to the Manual of Patent Examining Procedure, "a claim limitation will be interpreted to invoke 35 U.S.C. 112, sixth paragraph, if it meets the following 3-prong analysis: (A) the claim limitations must use the phrase 'means for' or 'step for'; (B) the 'means for' or 'step for' must be modified by functional language; and (C) the phrase 'means for' or 'step for' must not be modified by sufficient structure, material or acts for achieving the specified function." See MPEP § 2181(I). In this application, claim 12 contains the phrase "means for" in lines 1 and 2 of the claim. Moreover, the phrase "means for" is modified by functional language in each occurrence. Furthermore, claim 12 satisfies the third prong of this analysis because neither of the "means for" clauses contains sufficient structural components for achieving the specified functions. Therefore, because claim 12 satisfies all three prongs of the analysis, this claim shall be treated under 35 U.S.C. 112, sixth paragraph.

Claim Objections

4. Claim 11 is objected to because of the following informality: in line 3 of this claim, there

is an insufficient antecedent basis for the following limitation: "the cabin". The preceding lines of this independent claim did not refer to "the cabin". For the purpose of an examination on the merits, the examiner has considered this as a recitation to "the aircraft cabin", rather than "the cabin" as recited. Appropriate correction is required.

5. Claim 18 is objected to because of the following informality: in line 1 of this claim, the recited dependence on claim 10 is improper. The preamble of claim 18 recites a method, and thus, should be dependent on a method claim and not, on a claim to a device. Consequently, for the purpose of an examination on the merits, claim 18 has been treated as to depend on claim 11, rather than claim 10. Appropriate correction is required.

6. Claim 18 also is objected to because of the following informality: in line 1 of this claim, the word "comprises" should be changed to the word "comprising". Appropriate correction is required.

Claim Rejections - 35 USC § 112

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 19-21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

9. Claims 19-21 each recite the following limitation in line 2: "the angle". However, there is an insufficient antecedent basis for this limitation in each of these three claims. Claims 19-21 are each said to be dependent on claim 5, but claim 5 does not refer to any such "angle".

Consequently, for the purpose of an examination on the merits, the examiner has considered each of these three claims to be dependent on claim 18, rather than claim 5 as stated.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

11. **Claims 2-4 and 7-21** are rejected under 35 U.S.C. 103(a) as being unpatentable over Rother et al. (US 2,516,805) in view of Japanese Patent No. JP 59093141 ("JP '141"). These two references, when considered together, teach all of the elements recited in **claims 2-4 and 7-21** of this application, except for obvious matters of design choice and certain optimized claimed ranges (claims 9 and 15-21).

12. In particular, claim 11 of this application is obvious when Rother et al. is viewed in light of the JP '141 reference. Rother et al. discloses the invention substantially as claimed, including: generating and directing at least one air jet (the direction of the airstream emanating from ventilator outlet unit 23 is manually adjusted by pivoting ball portion 27 within socket member 61) into the aircraft cabin (aircraft cabin passenger compartment 10), via at least one blower (ventilator outlet unit 23, which includes a rotating ball portion 27, tubular member 35, and socket member 61); and altering the direction of the air jet (into aircraft cabin 10), wherein the altering occurs via rotation of the blower (by manually rotating ball portion 27 of the ventilator

outlet unit 23 within socket member 61). Refer to Rother et al., Figures 1-4; column 1, lines 42-47; column 2, lines 19-24 and 41-44; and column 4, lines 67-75.

However, claim 11 of this application further discloses the steps of measuring the temperature of the air jet; and altering the direction and/or the impulse of the air jet depending upon the measured temperature. Rother et al. does not disclose these additional steps.

The JP '141 reference, although, teaches a method for adjusting the angle of an air-blowing outlet, wherein a shape memory alloy coil (1) measures/senses the temperature of the discharged air jet, and then, alters the direction of the discharged air jet depending upon the measured temperature by pivoting the air blowing outlet (5) about a horizontal axis (7), for the purpose of automatically adjusting the discharge angle of a supply air jet in response to the air jet temperature so that occupant comfort may be optimized during both heating and cooling modes. See JP '141, Figures 2-3; also refer to attached English abstract for JP '141. Therefore, when Rother et al. is viewed in light of the JP '141 reference, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the aircraft cabin air-conditioning method of Rother et al. by additionally measuring the air jet temperature and altering the direction of the air jet based upon the measured temperature, as taught by the JP '141 reference, in order to automatically adjust the discharge angle of the supply air jet in response to the air jet temperature so that passenger comfort may be optimized during both heating and cooling modes. Refer to the attached English abstract for JP '141.

13. In regard to claim 2, the modified air-conditioning method of Rother et al. further teaches that the temperature of the air jet is measured at a location spaced from the blower (the shape memory alloy coil 1, which measures the air jet temperature, is located rearwardly of, and spaced

apart from, the air blowing outlet). See JP '141, Figures 2-3. Therefore, Rother et al. in view of the JP '141 reference also renders the limitations set forth in this claim obvious.

14. In regard to claim 3, Rother et al. further discloses that the air jet is directed into the cabin (aircraft cabin passenger compartment 10) from the ceiling area (the ventilator outlet units 23 are located in shelf-like members 21, 22 at the ceiling of the aircraft cabin 10). Refer to Rother et al., Figure 1; column 2, lines 3-6. Consequently, Rother et al. in view of the JP '141 reference also renders the limitations set forth in claim 3 obvious.

15. In regard to claim 4, the modified air-conditioning method of Rother et al. further teaches that, as the temperature of the air jet rises, its angle with respect to the vertical is made smaller (heated air flow causes the shape memory alloy coil 1 to expand, which in turn, causes the air outlet to be pivoted downward, thereby reducing the angle that the air jet makes with a vertical reference plane). See the attached English abstract for JP '141. Thus, Rother et al. in view of the JP '141 reference also renders the limitations set forth in claim 4 obvious.

16. In regard to claim 18, Rother et al. further discloses a rotation device (rotatable ball portion 27) with which the means (ventilator outlet unit 23) for generating and directing the air jet can be rotated about a horizontal axis (the rotatable ball portion 27 can be manually pivoted about a horizontal axis within socket member 61), so as to vary the vertical angle of the air jet. Refer to Rother et al., Figure 3 and column 4, lines 67-75. Therefore, Rother et al. in view of the JP '141 reference also renders the limitations set forth in this claim obvious.

17. Moreover, claims 19-21 of this application are obvious when Rother et al. is viewed in light of the JP '141 reference. Rother et al., as modified by the JP '141 reference, teaches all of the elements of claims 19-21, except for (claim 19) setting the air jet angle within the range from

10 to 30 degrees for an air jet temperature of about 25 degrees Celsius, (claim 20) setting the air jet angle within the range from 45 to 60 degrees for an air jet temperature of about 15 degrees Celsius, and (claim 21) setting the air jet angle within the range from 75 to 90 degrees for an air jet temperature of about 9 degrees Celsius. However, it has been held that "[w]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation". See MPEP § 2144.05(II)(A) (quoting *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955). Although, it has further been held that "[a] particular parameter must first be recognized as a result-effective variable, i.e., a variable which achieves a recognized result, before the determination of the optimum or workable ranges of said variable might be characterized as routine experimentation. Refer to MPEP § 2144.05(II)(B) (quoting *In re Antonie*, 559 F.2d 618, 195 USPQ 6 (CCPA 1977). In regard to claims 19-21 of this application, the prior art, namely the JP '141 reference, clearly teaches that both the angular position of the air outlet device and the air jet temperature are variable parameters. Refer to the attached English abstract for JP '141. Moreover, the angular position of the air outlet device and the air jet temperature are also result-effective variables because the conditioning of the aircraft cabin, and consequently passenger comfort, will be affected as a result of varying these two parameters (e.g., if warm air is discharged horizontally, i.e., a angle of approximately 90 degrees, it is will unlikely reach the occupied zone of the aircraft cabin). Accordingly, it would have been obvious to one having ordinary skill in the art at the time the invention was made to select an angular range of 10 to 30 degrees for an air jet temperature of about 25 degrees Celsius, an angular range of 45 to 60 degrees for an air jet temperature of about 15 degrees Celsius, and an angular range of 75 to 90 degrees for an air jet temperature of about 9

degrees Celsius, because the selection of these particular angular ranges for each associated air jet temperature merely constitutes the optimization of design parameters which fails to patentably distinguish claims 19-21 in this application over the aircraft cabin air-conditioning method of Rother et al., as modified by the JP '141 reference.

18. Furthermore, claim 12 of this application is obvious when Rother et al. is viewed in light of the JP '141 reference. Rother et al. discloses the invention substantially as claimed, including: means (ventilator outlet unit 23, which includes a rotating ball portion 27, tubular member 35, and socket member 61) for generating and directing at least one air jet into the aircraft cabin (aircraft cabin passenger compartment 10); and a means (rotatable ball portion 27 of ventilator outlet unit 23) for altering the direction of the air jet, wherein the means (27) for altering is adapted to rotate the means (35) for directing and generating to rotatably change the direction of the air jet (the direction of the airstream emanating from ventilator outlet unit 23 is manually adjusted by pivoting ball portion 27 within socket member 61). Refer to Rother et al., Figures 1-4; column 1, lines 42-47; column 2, lines 19-24 and 41-44; and column 4, lines 67-75.

However, claim 12 of this application further discloses a means for measuring the temperature of the at least one air jet; and a means for altering the direction and/or the impulse of the air jet dependent upon the measured air jet temperature. Rother et al. does not contain these additional limitations.

The JP '141 reference, although, teaches an angularly adjustable air-blowing outlet having a means (shape memory alloy coil 1) for measuring the temperature of at least one air jet; and a means (fork link 6, which is coupled to shape memory alloy coil 1 via shaft 3 and upper plate 2) for altering the direction of the air jet dependent upon the measured air jet temperature

(as sensed by the shape memory alloy coil 1) by pivoting the air blowing outlet (5) about a horizontal axis (7), for the purpose of automatically adjusting the discharge angle of a supply air jet in response to the air jet temperature so that occupant comfort may be optimized during both heating and cooling modes. See JP '141, Figures 2-3; also refer to attached English abstract for JP '141. Therefore, when Rother et al. is viewed in light of the JP '141 reference, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the aircraft cabin air-conditioning outlet unit of Rother et al. by adding a temperature sensing means (1) to the air outlet, and a mechanical coupling means (2, 3, 6) for pivoting the air outlet in response to the sensed temperature, as taught by the JP '141 reference, in order to automatically adjust the discharge angle of the supply air jet in response to the air jet temperature so that passenger comfort may be optimized during both heating and cooling modes. Refer to the attached English abstract for JP '141.

19. In regard to claim 7, the modified aircraft cabin air-conditioning outlet unit of Rother et al. further teaches that the means (23) for altering the direction of the air jet has a component (shape memory alloy coil 1) with a temperature-dependent form (a high temperature air jet causes the shape memory alloy coil 1 to expand, whereas a low temperature air jet causes the shape memory alloy coil 1 to contract). See the attached English abstract for JP '141. Therefore, Rother et al. in view of the JP '141 reference also renders the limitations set forth in this claim obvious.

20. In regard to claim 8, the modified aircraft cabin air-conditioning outlet unit of Rother et al. further teaches that the component (1) includes a shape memory alloy. Refer to the attached

English abstract for JP '141. Consequently, Rother et al. in view of the JP '141 reference also renders the limitations set forth in claim 8 obvious.

21. Claim 9 of this application also is obvious when Rother et al. is viewed in light of the JP '141 reference. As described above, Rother et al., as modified by the JP '141 reference, discloses all the elements of base claim 7, the claim upon which this claim depends. However, claim 9 of this application further discloses that the temperature sensing component has a bi-metallic element. Rother et al., as modified by the JP '141 reference, does not expressly disclose this additional limitation. Although, at the time the invention was made, it would have been an obvious matter of design choice to a person of ordinary skill in the art to use either the shape memory alloy disclosed in the JP '141 reference for the temperature sensing component, or alternatively, a bi-metallic element for the temperature sensing component as recited in claim 9 of this application, because the applicant has not disclosed that using a bi-metallic element for the temperature sensing component provides an advantage, is used for a particular purpose, or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected the applicant's invention to perform equally well with a temperature sensing element in the form of a shape memory alloy, as taught by the JP '141 secondary reference, because a shape memory alloy also readily responds to changes in air temperature by altering its shape. See the attached English abstract for JP '141.

22. In regard to claim 10, the modified aircraft cabin air-conditioning outlet unit of Rother et al. further teaches that the means (shape memory alloy coil 1) for measuring the temperature is positioned in such a way as to measure the temperature of the air jet at a location spaced away from the means for generating and directing (the shape memory alloy coil 1, which measures the

air jet temperature, is located rearwardly of, and spaced apart from, the air blowing outlet). See JP '141, Figures 2-3. Thus, Rother et al. in view of the JP '141 reference also renders the limitations set forth in claim 10 obvious.

23. In regard to claim 13, Rother et al. further discloses a rotation device (rotatable ball portion 27) with which the means (ventilator outlet unit 23) for generating and directing the air jet can be rotated about a horizontal axis (the rotatable ball portion 27 can be manually pivoted about a horizontal axis within socket member 61), so as to vary the vertical angle of the air jet. Refer to Rother et al., Figure 3 and column 4, lines 67-75. Therefore, Rother et al. in view of the JP '141 reference also renders the limitations set forth in this claim obvious.

24. In regard to claim 14, the modified aircraft cabin air-conditioning outlet unit of Rother et al. further teaches that the means for altering the direction of the air jet is adapted to make smaller the angle of the air jet with respect to the vertical as the temperature of the air jet rises (heated air flow causes the shape memory alloy coil 1 to expand, which in turn, causes the air outlet to be pivoted downward, thereby reducing the angle that the air jet makes with a vertical reference plane). See the attached English abstract for JP '141. Consequently, Rother et al. in view of the JP '141 reference also renders the limitations set forth in claim 14 obvious.

25. In addition, claims 15-17 of this application are obvious when Rother et al. is viewed in light of the JP '141 reference. Rother et al., as modified by the JP '141 reference, teaches all of the elements of claims 15-17, except for the means for altering the direction and/or the impulse of the air jet is adapted to set the angle within the following ranges: (claim 15) from 10 to 30 degrees when the temperature of the air jet is about 25 degrees Celsius, (claim 16) from 45 to 60 degrees when the temperature of the air jet (26) is about 15 degrees Celsius, and (claim 17) from

75 to 90 degrees when the temperature of the air jet (26) is about 9 degrees Celsius. However, it has been held that "[w]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation". See MPEP § 2144.05(II)(A) (quoting *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955). Although, it has further been held that "[a] particular parameter must first be recognized as a result-effective variable, i.e., a variable which achieves a recognized result, before the determination of the optimum or workable ranges of said variable might be characterized as routine experimentation. Refer to MPEP § 2144.05(II)(B) (quoting *In re Antonie*, 559 F.2d 618, 195 USPQ 6 (CCPA 1977). In regard to claims 15-17 of this application, the prior art, namely the JP '141 reference, clearly teaches that both the angular position of the air outlet device and the air jet temperature are variable parameters. Refer to the attached English abstract for JP '141. Moreover, the angular position of the air outlet device and the air jet temperature are also result-effective variables because the conditioning of the aircraft cabin, and consequently passenger comfort, will be affected as a result of varying these two parameters (e.g., if warm air is discharged horizontally, i.e., a angle of approximately 90 degrees, it is will unlikely reach the occupied zone of the aircraft cabin). Accordingly, it would have been obvious to one having ordinary skill in the art at the time the invention was made to select an angular range of 10 to 30 degrees for an air jet temperature of about 25 degrees Celsius, an angular range of 45 to 60 degrees for an air jet temperature of about 15 degrees Celsius, and an angular range of 75 to 90 degrees for an air jet temperature of about 9 degrees Celsius, because the selection of these particular angular ranges for each associated air jet temperature merely constitutes the optimization of design parameters which fails to patentably distinguish claims 15-17 in this

application over the aircraft cabin air-conditioning outlet unit of Rother et al., as modified by the JP '141 reference.

26. **Claim 5** is rejected under 35 U.S.C. 103(a) as being unpatentable over Rother et al. (US 2,516,805) in view of Japanese Patent No. JP 59093141 ("JP '141") as applied to claim 11 above, and further in view of de Villiers et al. (US 5,647,532). These three references, when considered together, teach all of the elements recited in **claim 5** of this application.

27. In particular, claim 5 of this application is obvious when Rother et al. is viewed in light of the JP '141 reference, and further viewed in light of de Villiers et al. As described above, Rother et al., as modified by the JP '141 reference, discloses all the elements of base claim 11, the claim upon which this claim depends. However, claim 5 of this application further discloses that, as the temperature of the air jet rises, its impulse is increased. Rother et al., as modified by the JP '141 reference, does not contain this additional limitation. The de Villiers et al. reference, although, teaches a thermally actuated air diffuser that includes a movable baffle (106) controlled by a thermally sensitive element (22) in the duct (D) airstream, wherein when heated air flows in the ducting (D), the baffle (106) descends to the fully open position of the diffuser so as to deliver the maximum amount of heated into the space for the purpose of raising the temperature in the occupied space as quick as possible, especially when the occupied space is significantly below the desired temperature setpoint. Refer to de Villiers et al., Figures 1-2; column 5, lines 9-10 and 49-63. Therefore, when Rother et al. is viewed in light of the JP '141 reference, and further viewed in light of de Villiers et al., it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the aircraft cabin air-conditioning method of Rother et al. in view of the JP '141 reference by additionally increasing the impulse of

the air jet as the air jet temperature rises (by using an additional temperature sensitive element), as taught by de Villiers et al., in order to raise the temperature in the occupied space as quick as possible, especially when the occupied space is significantly below the desired temperature setpoint. See de Villiers et al., column 5, lines 59-63.

Response to Arguments

28. Applicant's arguments with respect to pending claims 2-5 and 7-21 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

29. See attached form PTO-892 for additional pertinent prior art, which was not directly relied upon in this action.

30. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patrick F. O'Reilly III whose telephone number is (571) 272-3424. The examiner can normally be reached on Monday through Friday, 8:30 am to 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven B. McAllister can be reached on (571) 272-6785. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Patrick F. O'Reilly III/
Examiner, Art Unit 3749

/Steven B. McAllister/
Supervisory Patent Examiner, Art Unit 3749